

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method of manufacturing a semiconductor device, said method comprising:

forming an insulating film on a semiconductor base material, said insulating film being predominantly composed of organic siloxane and containing an organic component which has no chemical bond to said organic siloxane; ~~and~~

plasma treating said insulating film to remove said organic component and form a modifying layer on a surface of said insulating film; and

forming a silicon oxide film on said modifying layer.

2. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, including forming said insulating film by chemical vapor deposition.

3. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, wherein forming said insulating film includes:

coating said semiconductor base material with an insulating film composition containing said organic siloxane and said organic component; and

heat treating said insulating film composition at a temperature between 100°C and 200°C.

4. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, including plasma treating using a gas containing at least one element selected from the group consisting of oxygen, hydrogen, and nitrogen.

5. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, wherein molecules of said organic siloxane contain an alkyl group or an allyl group.

6. (Previously Presented) The method of manufacturing a semiconductor device according to claim 5, wherein said organic siloxane is methyl silsesquioxane.

7. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, further comprising, after said plasma treating, heat treating said insulating film at a temperature between 250°C and 450°C.

8. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1, further comprising, after said plasma treating, heat treating said insulating film at a temperature between 400°C and 450°C.

9. (Currently Amended) A method of manufacturing a semiconductor device, said method comprising:

forming an insulating film on a semiconductor base material, said insulating film being composed of organic siloxane; ~~and~~

plasma treating said insulating film to remove an organic group from said organic siloxane and form a modifying layer on a surface of said insulating film; and
forming a silicon oxide film on said modifying layer.

10. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, including forming said insulating film by chemical vapor deposition.

11. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, forming said insulating film includes:

coating said semiconductor base material with an insulating film composition containing said organic siloxane and said organic component; and
heat treating said insulating film composition at a temperature between 100°C and 200°C.

12. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, wherein said plasma treating is performed using a gas containing at least one element selected from the group consisting of oxygen, hydrogen, and nitrogen.

13. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, wherein molecules of said organic siloxane contain an alkyl group or an allyl group.

14. (Previously Presented) The method of manufacturing a semiconductor device according to claim 13, wherein said organic siloxane is phenyl methyl siloxane.

15. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, further comprising, after said plasma treating, heat treating said insulating film at a temperature between 250°C and 450°C.

16. (Previously Presented) The method of manufacturing a semiconductor device according to claim 9, further comprising, after said plasma treating, heat treating said insulating film at a temperature between 400°C and 450°C.

17. (New) The method of manufacturing a semiconductor device according to claim 1, further comprising, after said plasma treating, heat treating said insulating film.

18. (New) The method of manufacturing a semiconductor device according to claim 1, including plasma treating in an oxygen ambient.

19. (New) The method of manufacturing a semiconductor device according to claim 1, wherein said modifying layer is hydrophilic.

20. (New) The method of manufacturing a semiconductor device according to claim 9, further comprising, after said plasma treating, heat treating said insulating film.

21. (New) The method of manufacturing a semiconductor device according to claim 9, including plasma treating in an oxygen ambient.

22. (New) The method of manufacturing a semiconductor device according to claim 9, wherein said modifying layer is hydrophilic.